cavity in such cases where infectious peritonitis exists, especially when accompanied by copious exudation. The author points here to his second and third cases, as showing the error in neglecting this, and cites also a similar case of Bardeleben,[1], recently published. The drain should be at least as large as the small finger, and be carried well up in the vicinity of the perforation. When the peritonitis has assumed a more diffuse character, the introduction of several drains in different directions, would be advisable. Mikulicz recommends uniting the peritoreum by itself, dusting the edges with iodoform, before closing the abdomen.

C. J. Colles.

RECENT CONTRIBUTIONS TO THE LITERATURE OF CHOLECYSTOTOMY.

1. Chlolecystotomy applied to the treatment of Biliary Calculi. By M. Jules Bœckel (Strasburg). *Revue de Chirurgie.* 1885. P. 801.
2. The Surgical Treatment of Gall Stones. By Lawson Tait, F.R.C.S. *Lancet.* 1885, Vol. II., pp. 239, 424.
3. Cholecystotomy; Notes on two successful cases. By A. W. Mayo Robson, (Leeds). *Lancet.* 1885, Vol. II, p. 806.

1. In this paper the author tries to show that where a biliary fistula exists, the operation for cholecystotomy is both simple and safe, but that where such is not present, the operation is difficult and dangerous. Three cases of operation for biliary fistula are narrated, two successful and one unsuccessful. In the latter, the fatal result is accounted for by the presence of a calculus in the common bile duct near the duodenum, which could not be recognized during life.

Where a biliary fistula exists, and shows no signs of healing spontaneously, B. holds that cholecystotomy, by opening up the fistula, is not only permissible but called for; that early intervention insures and hastens cure by preventing the ill effects of the constant escape of bile from the fistula; and that the operation, easy and safe in itself, is not appreciably less so when the peritoneum has to be opened, provided that antiseptic dressings are used. On the other hand, where no fistula has been formed, he holds that before an operation is undertaken the diagnosis must be made certain by careful observation of the condition and progress of the patient, and especially by the recognition of a distended gall bladder in which calculi have been detected by an exploratory puncture; that even when the diagnosis has been established the operation is only to be undertaken in exceptional (sic) cases to avoid the formation of calculi within the hepatic bile ducts, the onset of which cannot be foreseen. When the diagnosis is doubtful B considers that the risk is too great to justify the possible benefit of an operation. Our present knowledge, he believes, does not entitle us to say whether cholecystotomy or cholecystectomy is preferable when an operation is undertaken. In the course of his remarks he does not explain why an opening into the peritoneum, made during an operation for biliary fistula should be comparatively safe, while one for diagnostic purposes, or where there is a distended gall bladder, should be so dangerous as hardly to be undertaken, the dressing in each case being the same: neither does he consider the risk to the patient when a calculus in the cystic duct necessitates the constant flow of bile into the duodenum, the gall bladder being meanwhile distended with mucus, but not yet adherent to the abdominal wall.

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[1] Berlin. Klin. Wochenschr. 1885. No. 25.

2. In their clinical aspect, and probably also, as he believes, in their pathological origin, the author divides gall stones into two classes, (1) the solitary, (2) the numerous. The former are seldom more than two or three in number, and are often of considerable size. Owing to their comparatively large size and rounded shape, they are liable to be caught in the cystic duct and give rise to a series of symptoms which result from the blocking of this duct. These are, pain in the region of the gall-bladder, with its distention by an opalescent fluid secreted by the mucous membrane, loss of appetite, impairment of strength, and emaciation; the bile, prevented from entering the gall-bladder flows constantly into the duodenum so that there is no jaundice. The diagnosis is to be made from the above symptoms, especially the distended gall-bladder. The operation of cholecystotomy is easy up to the evacuation and opening of the gall-bladder, but the removal of the calculus from the duct may be a matter of considerable difficulty—in one case it had to be broken down in situ before it could be removed.

In the second class of cases on multiple gall stones—a large number—often several hundred of calculi are present varying in weight from a fraction of a grain to 8, 10 and 12 grains, the majority being between two and three grains. From their irregular shape and comparatively small size these gall stones less frequently remain fixed in the cystic or common bile duct (which is larger), and while passing onwards they generally admit of a flow of bile past them. Accordingly, while attacks of biliary colic are frequent and severe, jaundice is seldom seen except in the earlier attack; bile is generally found in the gall-bladder bathing the calculi, and the distention of the gall-bladder is usually intermittent in a way which is often puzzling. Contrasted with the operation for the solitary kind of calculus, that for the numerous kind differs considerably in its details. In the latter the gall-bladder is not distended. Hence the diagnosis is more uncertain, and when the abdominal section is made, the gall-bladder is not so easily found. Evacuation of the contents is easy, but the subsequent flow of bile requires constant care throughout the operation to prevent contamination of the peritoneum. The majority of the gall stones are easily removed, but great care must be taken that none remain in the neck of the bladder or in the ducts, otherwise the gall-bladder may be afterwards distended with mucus and the wound reopened. In one case a gall stone, lodged in the lower end of the common bile duct, had to be crushed in situ from the peritoneal aspect.

The operation of cholecystomy is described as follows: "A vertical incision is made from the margin of tbe ribs downwards over the hepatic notch, cutting carefully through the textures till the peritoneum is reached; this is then seized carefully with two pairs of forceps and pulled backwards. An opening is made between the forceps to allow the forefinger to enter and feel for the gall-bladder: when found its fundus is to be brought cautiously toward the wound and seized with the forceps, if distended it is then tapped, incised to allow the forefinger to enter, and the cut margins held with forceps; with forceps or scoop the calculi are then removed." A continuous suture is then applied so as to accurately close the peritoneum by uniting the edges of the wound of the gall-bladder, the two peritoneal surfaces being carefully adapted to each other." A drainage tube is inserted for six or seven days. Tait has found no tendency for gall stones to form after his cases of cholecystotomy and considers that it would be as reasonable to excise the urinary bladder to prevent reformation of stone there as to perform cholecystectomy as a preventative against gall stones. "At any rate, the mortality of cholecystectomy is 50 per cent.: the mortality of cholecystotomy has not yet appeared." In conclusion, he says: "Amongst all the many advances which abdominal surgery has seen, I claim that there is none so certain nor so free from risk, nor so brilliantly successful as the surgical treatment of gall stones."

3. The symptoms in both these cases were due to obstruction of the cystic duct, but contrary to Mr. Lawson Tait's experience by numerous, not solitary, calculi. The symptoms, besides the distended gall-bladder, were local, dragging pain and uneasiness in the one case, and vomiting and prolonged constipation in the other. In one there was nearly a pint of clear watery fluid, in the other eight ounces of a similar fluid, in the gall-bladder. Jaundice seems to have been absent in both. After the operation an obstruction of the cystic duct was diagnosed from the re-accumulation of the watery fluid. This from absence of other cause was thought to be due to an organic stricture of the cystic duct. The fluid contained in the gall-bladder was found to possess antiseptic properties, also to contain two ferments, one curdling milk, and the other having a marked diastatic action on starch.

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